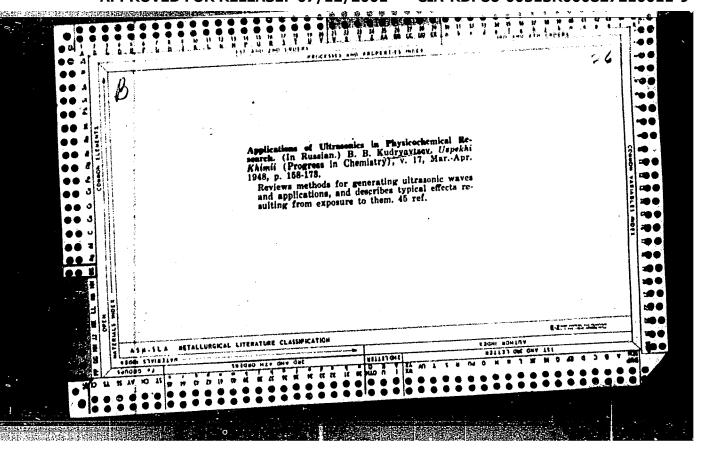
"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R000827210011-9



KUDRYAVTSEV, B. B.

Kudryavtsev, B. B., The absorption of sound in air lighted with ultraviolet rays. P. 155.

With the help of an accustic interferometer, the dying of sound in air and in air lighted with ultraviolet radiation is measured. The ratio of the coefficients of the absorption of sound in both cases is determined. In all 104 such ratios are determined. Statistical treatment of the results of measurement lead to the conclusion that the absorption coefficient in lighted air is somewhat smaller than the corresponding value for the non-lighted air.

June 29, 1948

SO: Journal of Experimental and Theoretical Physics (USSR) 19, No. 2 (1949)

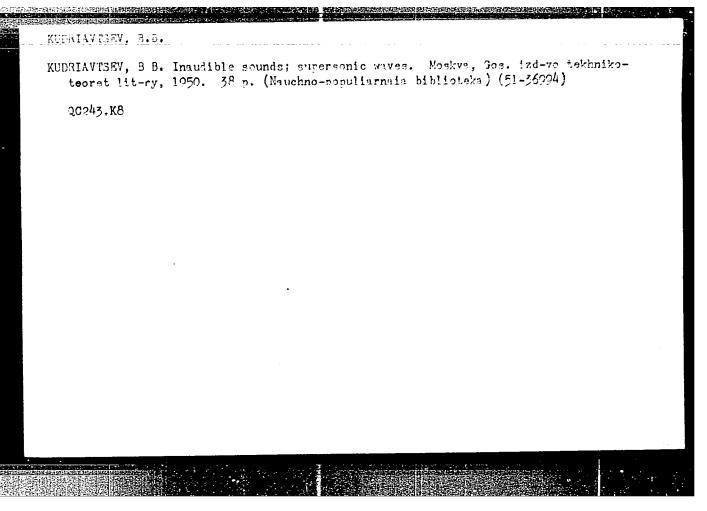
KUDRIAVTSEV, B. B.

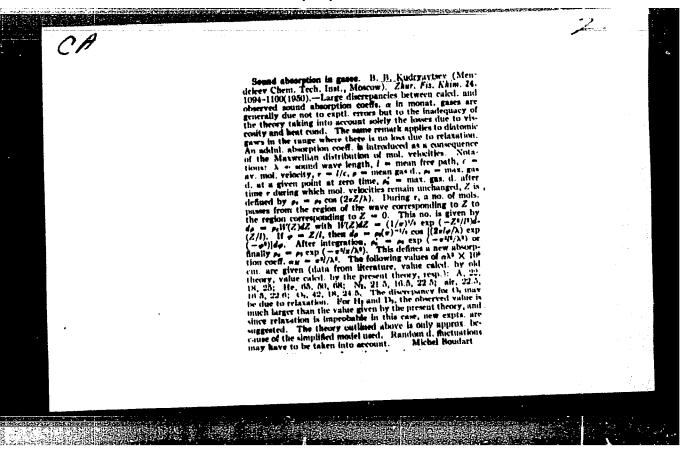
Kudrievisev, B. B. and Sorokina, E. I., The propagation of the ultra sound in solutions. P. 158.

With the help of an acoustic interferometer the rates of sound in various mixtures were measured at various temperatures. The densities of the corresponding mixtures were measured simultaneously. On the basis of the obtained data the molar rates of the sound in mistures were calculated. Calculations showed that the molar rates of sound in mixtures do not change with temperature. Within the limits of experimental errors the molar rates of sound in mixtures are an additive function of the composition of the mixture and also an additive function of the bonds in the molecules. Deviation from this rule are probably due to the formation of molecular compounds which are destroyed at increase of temperature. On the basis of the results of measurements a method of an approximation determination of molecular weights of the dissolved substances is proposed.

June 29, 1948

30: Journal of Experimental and Theoretical Physics (USSR) 19, No. 2 (1949)





USSR/Chemistry - Energy of Gas Feb 51

"Energy Fluctuations in an Ideal Gas," B. B. Kudry-avtsey, Chemicotech Inst imeni D. I. Mendeleyev,

Moscow

"Zhur Fiz Khim" Vol XXV, No 2, pp 147-152

Worked out new expressions to calc energy fluctuations in collections of small number of mols of ideal monomol gas. S. B. Gorbchayev's formula, prior to this the most complete and free of int contradictions, is applicable only to large aggregates of mols.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R000827210011-9"

KUDRYAVTSEV, B. B.

Application of ultrasonic methods to research practice in physical chimistry. Koskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1952. 323 p. (53-17044)

QC244.K8

with the great Communist construction works, ultrasound is now being used for testing the hardening of KUDRYAVTSEV, B. B., Prof. defectoscope. Sokolov has also designed an ultraing place in the earth's crust during earthquakes. The elastic wave is reduced on the same scale: by scale model of the earth for studying phenomena takconcrete. S. Ya. Sokolov has proposed the use of a can be achieved. sound microscope, which permits observation of objects the earth can be studied with the aid of Sokolov's tions per sec, seismic phenomens and the structure of hundred thousand and several tens of million oscillaing sound waves having a frequency between several nification by factors amounting to tens of thousands surrounded by a medium that is opaque to light. "Mauka i Znizn'" "Ultrasound," Prof B. B. Kudryavtsev, Dr Chem Sci USSR/Medicine - New Drugs now be administered intravenously. In connection plates. USSR scientists developed a method of disnique was particularly useful in dispersing AgEr of ultrasound (e.g., Eg emulsions). This techpersing oil of camphor in water with ultrasound; in order to obtain highly sensitive photographic the dispersion of various substances with the aid Prof S. N. Rzhevkin has done outstanding work on in the form of the resulting emulsion, camphor can Chemistry, Physics - Ultrasound No 4, pp 20-23 Apr 52 22**11**33

B, B, (Prof.)

Petrov, Vasiliy Vladimirovich, 1761-1834

The Russian physicist Vasiliy Petrov. Znan. sila no. 5, 1952

9. Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

KUDRY AVTSEV, B, B., Prof.

Stoletov, Aleksandr Grigor'evich, 1839-1896

Book about a great Russian physicist ("A. G. Stoletov." By V. Bolkhovitinov. Reviewed by Prof. B. B. Kudryavtsev). Znan.sila 22 No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

KUDRYAVTSEV, B. B.

Aug 52

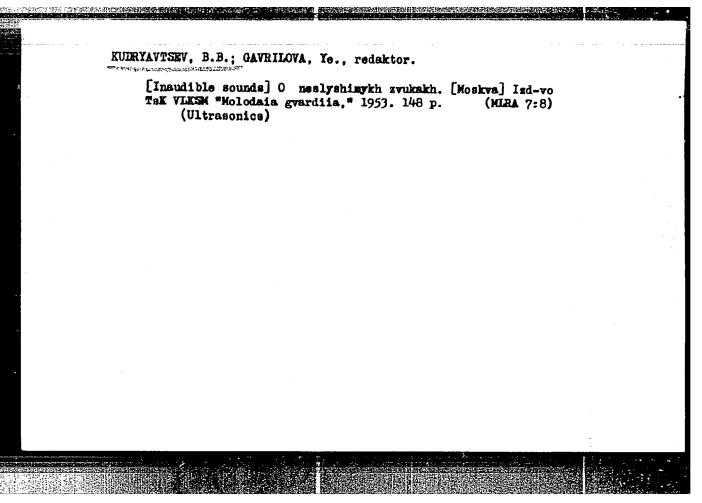
USSR/Chemistry - Ultrasound

"Review of B. B. Kudryavtsev's Book 'Application of Ultrasonic Methods in Practical Physiocochemical Research, " (V. F. Nozdrev, reviewer)

Zhur Fiz Khim, Vol 26, No. 8, pp 1218-1220

B. B. Kudryavtsev's "Primeneniye Ul'tr askusticheskikh Metodov v Praktike Fiz-Khim Issledovaniy (Application of Ultrasonic Methods in Practical Physicochemical Research), Gostekhizdat, 1952, is the first Russian-language work which completely reflects achievements in the field of ultrasonics as applied to the investigation of physical and physicochemical processes. It describes work done in the USSR and abroad. The book of I. G. Mikhaylov (1949) "Rasprostramemiye Ul'trazvnkovykh Volm v Zbidkostyakh" ("Propagation of Ultrasonic Waves in Liquids)," dealt only with the investigation of liquids and was therefore incomplete and one-sided. On the other hand, Kudryavtsev's book encompasses all the basic research, both theoretical and exptl, on the propagation of ultrasonic waves in gaseous, liquid, dispersed, and solid systems. It also includes a section on the application of ultrasonics in colloid chemistry.

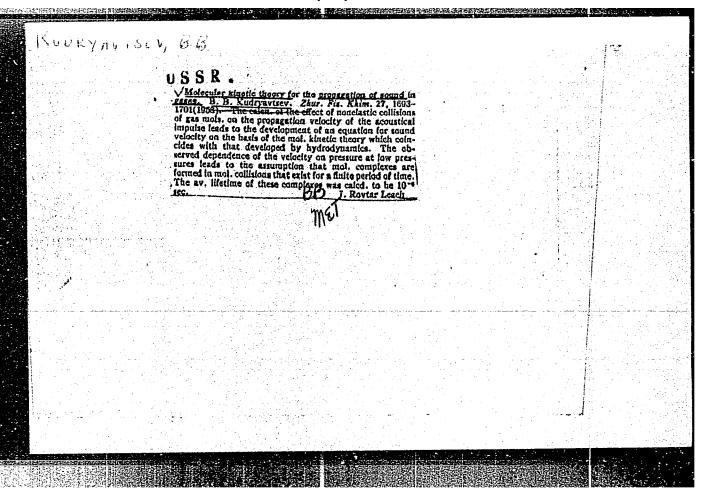
263 T 13



KRAVETS, T.P., chlen-korrespondent; KUDRYAVTSEV, B.B., professor.

An outstanding Soviet physicist, P.P.Lezarev. Fiz.v shkole 13 no.3:1518 My-Je '53.

1. Akademiya nauk SSSR (for Kravets.) (Lazarev, Petr Petrovich, 18781942)

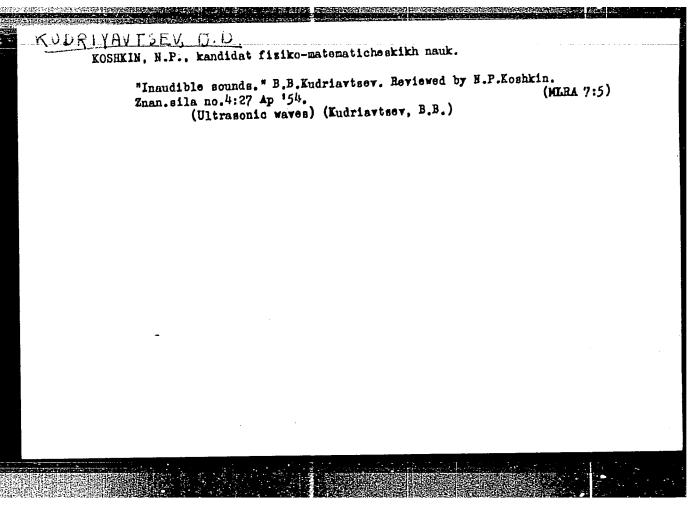


KUDRYAVTSEV, B.B., professor; KADER, Ya.M., redaktor; SRIBNIS, N.V., tekhnicheskiy redaktor

[Inaudible sounds] O neslyshimykh zvukakh. Moskva, Voen. izd-vo Ministerstva obor. SSSR, 1954. 107 p. [Microfilm] (Ultrasonic waves) (MIRA 9:2)

KUDRYAVISEV, B.B.; DUKOV, V.M., redaktor; MAKHOVA, N.N., tekhnicheskiy redaktor

[Simple experiments with ultrasonic waves] Prostye opyty s ul'trazvukami. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosve-shcheniia RSFSR, 1954. 115 p. (MLRA 7:9) (Ultrasonic waves)



KUDRYAVISEV, B. 3.

USSR/Chemistry - Physical Chemistry

Card 1/1

Author

: Kudryavtsev, B. B.

Title

: The speed of sound in liquids and the physico-chemical properties of liquids

Periodical

: Zhur. Fiz. Khim., 28, Ed. 5, 930 - 935, May 1954

Abstract

The importance of the acoustic measurement method in the study of physicochemical properties of liquids, in determining the nature of liquids, and in the formulation of the molecular-kinetic theory of the liquid state, is emphasised. Such measurements can be applied for the calculation of the ex constant in the van der Waals equation and in determining the dependence of this value upon temperature. Seven references: 3-USSR, 1-Swiss, 2-German, 1-Italian. Tables, graphs.

Institution : ...

Submitted

: Oct 31, 1953

KUDRYAVISEV. Boris Borisovich; METANIYEVA, M., redaktor; MIKHAYLOVSKAYA, N. tekhnicheskiy redaktor.

[Origin of things; study of the structure of matter] Pervonachala veshchei; ocherk o stroenii veshchestva. [Moskva] Izd-vo Tsk VIKSM "Molodaia gvardiia." 1955. 108 p. (MLRA 8:8)

(Science-Juvenile literature)

KUDRYAVTSEV, B. B. and MELKONYAN, L. G.

"Velocity of Sound in Liquid Mixtures Whose Components Form Chemical Compounds", a report presented at a conference of professors and teachers of the institutes of the Ministry of Education RSFSR and published in the "Application of Ultrasonics to the Investigation of Substances," Moscow, 1955.

KUDRYAVTSEV, B. B. and DREMINA, V. P.

"Dispersion of Velocity of Sound in Certain Organic Substances", a report presented at a conference of professors and teachers of the institutes of the Ministry of Education RSTSR and published in the "Application of Ultrasonics to the Investigation of Substances," Moscow, 1955.

KUDRYAVTSEV, B. B. and SUSLOV, B. N.

"Investigation of Liquid Binary Systems With Various Natures of the Molecular Interaction of the Components", a report presented at a conference of professors and teachers of the institutes of the Ministry of Education RSESR and published in the "Application of Ultrasonics to the Investigation of Substances," Moscow, 1955

CIA-RDP86-00513R000827210011-9 "APPROVED FOR RELEASE: 07/12/2001

KUDRYAVTSEV, BB.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61034

Author: Melkonyan, L. G., Kudryavtsev, B. B.

Instituten:

Velocity of Sound in Liquid Mixtures the Components of Which Title:

Form a Chemical Compound

Original

Sb: Primeneniye ul'traakustiki k issled. veshchestva, No 2, Periodical:

Moscow, Izd-vo MOPI, 1955, 35-59

Abstract: There were measured interferometrically the velocity (a) of ultra-

sound (106 hertz) in mixtures of different concentration: anilinephenol and phenol-paratoluidine (450-600), aniline-orthocresol (35°-50°) and isoamyl alcohol-nitrobenzene from (25°-45°). It is shown that formation of a compound is not necessarily associated with an anomalous change in a. Determination of molecular velocity of sound (R = $a1/3V_m$; V_m -- molecular volume) does not permit

Card 1/2

CIA-RDP86-00513R000827210011-9" **APPROVED FOR RELEASE: 07/12/2001**

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61034

Abstract: determination of the formation of a chemical compound in the mixture. The change of R with temperature that is sometimes observed is apparently not connected with either formation of a chemical compound or molecular association. Results of measurements of sound velocity in the mixtures and of their viscosity coefficient η indicate the absence of a univalent correlation between a and η : monotonous change in a on change in composition of the mixture can occur in **den**junction with the presence of an extreman on the η isotherms. On the basis of acoustical measurements there have been calculated the constants a of mem der Waals equation. Formation of a chemical compound in the mixture does not cause sharp changes in the magnitude of a which is due to the fact that forces of molecular interactions, in the opinion of the authors, have a different nature from that of the forces which cause the formation of a chemical compound.

Card 2/2

KUDRYAVTSEV, B. B. Dr. Chem. Sci.

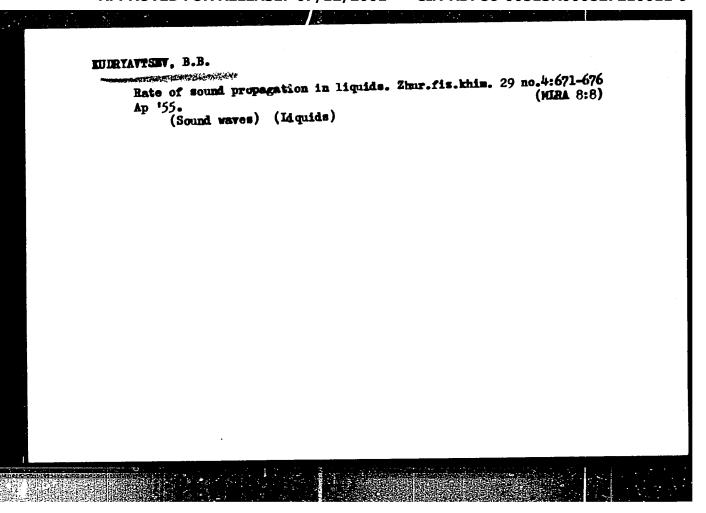
"Nuclear Fuel," Znan. Sila, No.2, 1955

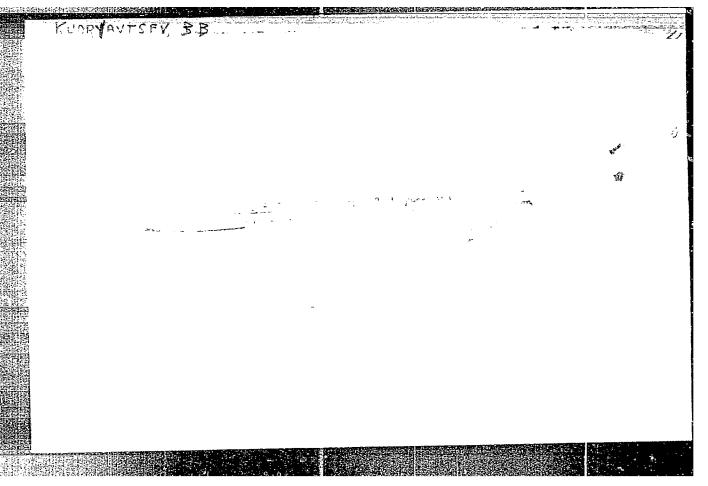
Summary of article D 306429, 8 Aug 55

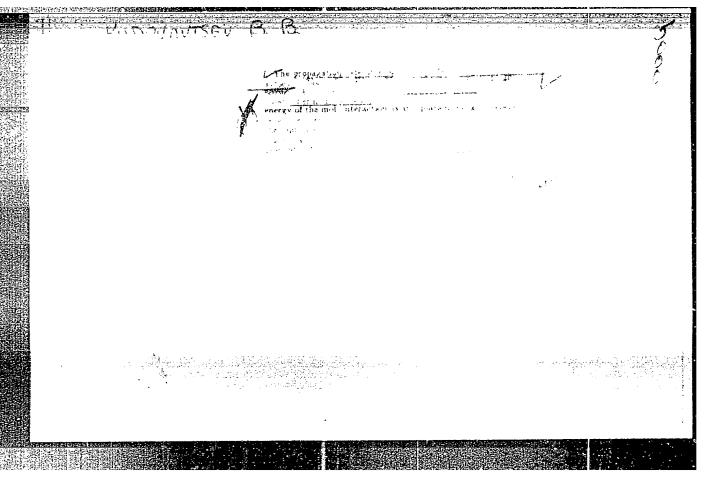
STEPANOV, B.

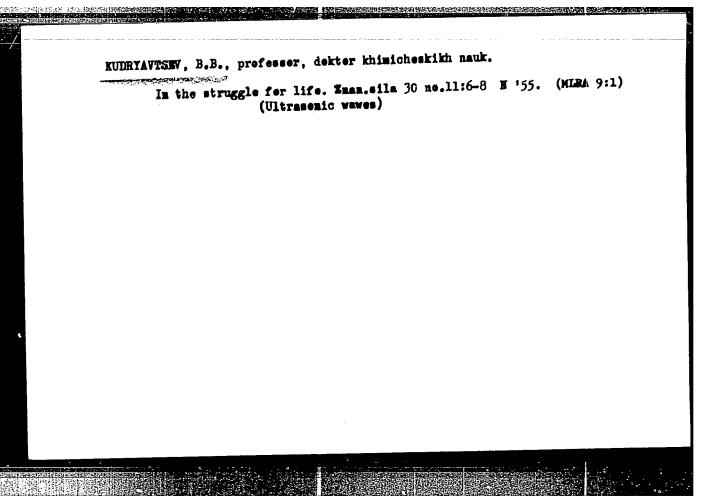
"Origin of things." B.B.Kudriavtsev. Reviewed by B.Stepanov. Znan.
(MLRA 8:11)

(Kudrjavtsev, B.B.) (Matter)









KUDRYAVTSEV, B. B.

"Velocity of Sound in Pure Liquids and Liquid Mixtures," paper presented at the Second International Congress on Achistics, Cambridge, Mass., 17-23 Jun 56.

Moscow Regional Pedagogical Institute, Moscow, USSR.

KUDRYAVISEV, B.

"The Sounds We Cannot Hear," a book published by the Foreign Languages Fublishing House, 1956, in German and English.

Deals with a new branch of science, ultrasound. The author speaks of the nature of ultra-sound and dwells in detail on the technical uses at can be put to.

Moscow News 30 June 1956

LAPP, R.E.; ANDREWS, N.L.; ASTAKHOV, K.V., professor, redaktor; KUDRYAVTSEV, B.B., professor, redaktor; KUSTOVA, A.V., kanditat fiziko-matematicheskikh nauk, redaktor.

[Muclear radiation physics. Translated from the English] Fisika indernogo izlucheniia. Perevod s angliiskogo. Pod red. K.V. Astakhova, B.B.Kudriav-tseva i A.V.Kustovoi. Moskva, Voen.izd-vo Ministerstva obor. SSSR, 1956.

(MLRA 9:4)
435 p.

(Nuclear physics) (Radiation)

NOZDRZV, New Sessor, redaktor; KUDRYAVTSKY, B.B., professor, redaktor.;
ZHITOV, S.P., tekhnicheskiy redaktor.

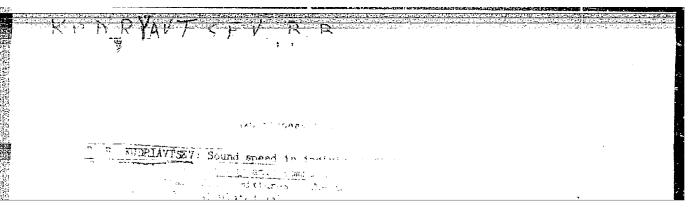
[Application of ultra-acoustics to the analysis of materials] Primenenie ul'traakustiki k issledovaniiu veshchestva. Moskva, Izd. MOFI. No. 3.

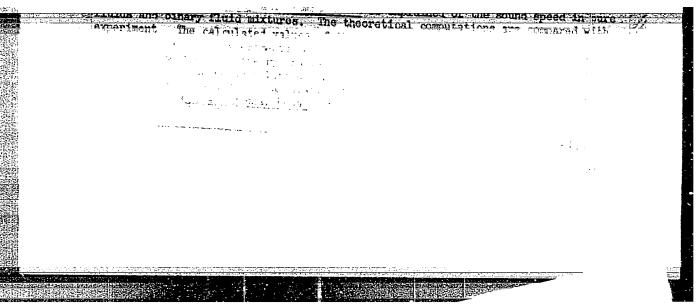
1956. 211 p. [Microfilm]

(Ultrasonic waves--Industrial applications)

(Ultrasonic waves--Industrial applications)

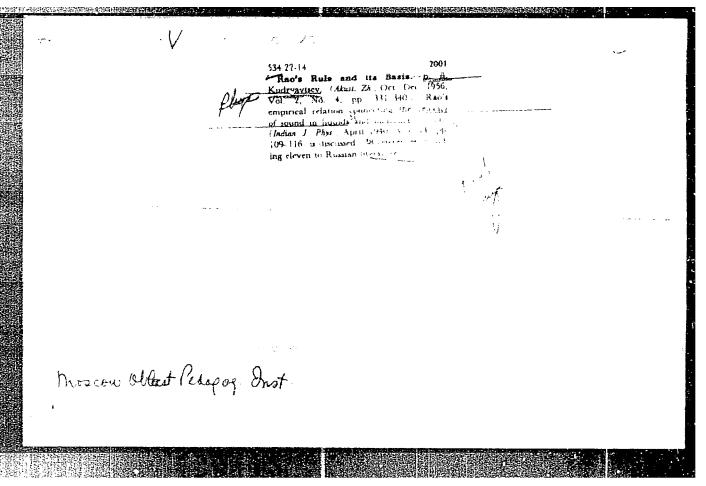
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18	### AND LIQUID MIXTURES B.B. Kudryaviaev. Akust. Zh., Vol. 1, Vol. 1, 39-50 (1956) In Puselan A thermodynami In alternative United to the compartson made with experience Compartson made with exp	





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WUDRYNVISEV, B.B. UBSR/Acoustics - Sound Vibrations and Waves, J-2 UBSR/Acoustics - Sound Vibrations and Waves, No 12, 1956, 35537 Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35537 Abst Journal: Kudryavtsev, B. B. Liquid Mixtures, and Solutions
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Abst Journal: Referst Zhur Frank Referst Zhur Frank Referst Zhur Be Be Be Author: Kudryavtsev, Be Be Rome Referst Zhur Be Refe
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Original Periodical: Abstract: An expression is derived for physical Char Fiber An expression is derived for physical Char Fiber An expression is derived from many binary mixton an expression in the energy and certain physical Char Fiber An expression is derived from many binary mixton an expression in the energy and certain work (Referst Zhur Many binary mixton an expression many binary mixton an expression many binary mixton an expression is derived from many binary mixton an expression many binary mixton and expression many mixton and expression many binary mixton and expression many many binary mixton many mixton many many mixton many many mixton many many mixton many
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KUDRYAVISEV

J-4

Category : USSR/Acoustics - Ultrasound

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2153

: Kudryavtsev, B.B. Author

: Chemical Effects of Ultrasonic Oscillations Title

Orig Pub : Primeneniye ul'traakustiki k issled: veshchestva. Vyp. 3. M., MOPI, 1956, 5-29

Abstract : Survey of various physical and chemical effects of ultrasonics. The chemical effects include: oxidation, hydrolysis, reduction, polymerization, depolymerization, molecular regrouping, "aging," etc. A very important role is played in chemical effects of ultrasonics by cavitation. The oxidation of KI by sounding results from processes causing resonant oscillations of microscopic air bubbles collecting in the standing-wave regions having the maximum pressure amplitudes. This explains the existence of an optimum ultrasonic frequency with respect to chemical effects, the absence of chemical effects when individual ultrasonic pulses are applied, the separation of I2 from a KI solution first near the surface of the liquid, and other characteristic features of ultrasonic effects. Depolymerization by sounding is principally due to cavitation and probably is of physical rather than chemical nature. One of the causes of depolymerization are friction forces which tear individual macromolecules away from the wicro-regions which are formed by the interlaced macromolecules and which have a gel structure. Polymerization is promoted by ultrasonics, owing

to formation of free radicals observed during the sounding.

Card : 1/2

> CIA-RDP86-00513R000827210011-9" **APPROVED FOR RELEASE: 07/12/2001**

Category : USSR/Acoustics - Ultrasound

J-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2153

Sounding affects the magnitude of the electrode potential and the course of various electrode processes. In the case of polarized electrodes, sounding causes depolarization, reducing the overvoltage in the case of electrolytic liberation of gas. Sounding changes the range of current densities at which shining plating is obtained, the yield per unit current in electrolysis, the microstructure of the plating, the effectiveness of deuterium enrichment in electrolysis of water, etc. Sounding affects the speed of crystallization, reduces considerably the hardening time of metal, and makes the ingot more uniform. Ultrasonics accelerates the dispersion hardening of aluminum, the aging of wine, the extraction from liquids and solids, etc. Intense ultrasonic oscillations accelerate considerably the heat-exchange process. Bibliography, lll titles.

Card

: 2/2

KUURTAVISM, Boris Borisovich, professor, doktor khimicheskikh nauk;

METANITEVA, M., redaktor; TERTUSHIN, M., tekhnicheskiy redaktor

[Inaudible sounds.] Neslyshimye zvuki. [Moskva] Izd-vo TSK

VLKSM "Molodaia gvardiia," 1957. 155 p.

(Ultrasonic waves)

KUDRYAVTSEV, B. B.

"Use of Ultrasonic Measurements in Physico-Chemical Studies."

report presneted at the Seminar on Physics, Application of Ultrasound, 23-26 Oct '57.

Leningrad Electro-Tech. Inst., Leningrad.

RUDAYHLISEV, B.B.

AUTHOR: Kudryavtsev, B.B.

46-2-16/23

TITIE:

The 5th Scientific Conference on applications of ultrasonics for testing materials. (Pyataya nauchnaya konferentsiya po primeneniyu ultraakustiki k issledovaniyu veshchestva) (News item)

PERIODICAL: "Akusticheskiy Zhurnal" (Journal of Acoustics), 1957, Vol.3, No.2, pp. 196-197 (U.S.S.R.)

ABSTRACT: Report on the 5th Scientific Conference on Applications of Ultrasonics for testing materials, held on January 30 to February 2, 1957 at the Moscow District Teaching Institute.

More than 50 papers and communiques presented. Two main groups of papers were devoted to the problem of sound absorption in liquids and gases and to its theoretical dependence on temperature and frequency, and to the industrial applications of ultrasonics and new methods of measurements.

AVAILABLE: Library of Congress

NOZDRAW, V.F., prof., red.; KUDRYAVTSEV, B.B., prof., red.; ZHITOV, S.P., tekhn.red.

[Use of ultrasonics for research in matter; papers of the convention] Primenenie ultraskustiki k issledovaniiu veshchestva; trudy konferentsii. Pod red. V.F.Nozdreva i B.B.Kudriavtseva. Moskva, Izd. MOPI. No.5. 1957. 161 p. (MIRA 11:4)

1. Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov. 4th.
(Ultrasonics)

KUDRYAUTSEV, B.B. 76-10-4/34 Dubinina, Ye.F., Kudryavtsev, B.B. AUTHORS: The Rate of Ultrasonic Propagation and the Hydration of Solutions (Skorost' rasprostraneniya ul'trazvuka i gidratatsiya rastvorov) TITLE: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 10, pp. 2191-2199 PERIODICAL: (USSR) Experiments were carried out in order to explain the influence of the hydration on the sound velocity in solutions. The sound ve-ABSTRACT: locity in salt solutions was carried out under conditions which admit to regard the ion hydration as known. For this purpose the sound velocities in saturated aqueous solutions of barium- and potassium acetate, of sodium-salicylate and formate, as well as of isovalerianic acid calcium in a temperature range of from 15 - 55° C were determined. The hydration of the ground phase for salts at various temperatures is known. On the strength of the investigation is shown: 1.) The amount of sound velocity in the solution is sensitive only to a small extent with respect to variations in the interaction between solvent molecules and the solved substance. 2.) If the accoustic measurements are used for the investigation of the solution properties the hydrate shell Card 1/2

76-10-4/34

The Rate of Ultrasonic Propagation and the Hydration of Solutions

with the hydrated ion or molecule cannot be considered as incompressible when the hydration is determined. In the case of such computations the compressibility of the various hydrate shells has to be estimated and taken into account in the case of further computations. For the estimation of the compressibility of the various hydrate shells the investigation of the accoustic properties of the saturated solutions which are in equilibrium with the solid phase is to be used. 3.) The accoustic measurements can be used for a precise determination of the hydration energy, if the latter is taken into account in the case of the derivation of the term for the sound velocity. Such computations demand, however, an increase of the accuracy of determination of the sound velocity by 1 - 2 orders by experimental way. 4.) The adiabatic compressibility is more sensitive than the sound velocity to the variations of the interaction in the solutions. There are 7 figures, 1 table, 7 Slavic references.

ASSOCIATION:

Moscow Oblast Institute for Pedagogics (Moskovskiy oblastnoy

pedinstitut) ITTED: May 4, 1956

SUBMITTED: AVAILABLE:

Library of Congress

Card 2/2

KUD	RYAVTSW, B. B.
	"Application of Ultrasonic Measurements to Study of Liquids."
pap	er presented at the 4th All-Union Cofn. on Accustics, Moscow, 26 May - & Jun 58.

KUDRYAVTSKY, Boris Borisovich, prof., doktor khim.nauk; KADER, Ya.M., red.; GAVRIIOVA, A.M., tekhn.red.

[Inaudible sounds] O neslyshimykh zvukakh. Izd.2., dop. Moskva. Voen.izd-vo M-va obor. SSSR, 1958. 143 p. (MIRA 12:3) (Ultrasonics)

KUDRYAVISEV, B. B.

"Investigation of Phenomena Accompanying the Propagation of Ultrasound and Methods to be used in Work in this Field: The Dispersion Effect Produced by Cavitation."

report presented at the 6th Sci. Conference on the Application of Ultrasound in the investigation of Matter, 3-7 Feb 1958, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im N. K. Krupskaya.

KUDRYAVISEV, B. B.

"The Effect of Resonance Phenomena on the Propagation of Sound,"

Report presented at the 6th Sci. Conference on the Application of Ultrasound in the Investigation of Matter, 3-7 Feb 58, Moscow, organized by Min. of Education RSFSR, and Moscow Oblast Pedagogic Inst. im N. K.Krupskaya

24(1)

PHASE I BOOK EXPLOITATION

90V/2178

Kudryavtsev, Boris Borisovich, Professor

- 0 neslyshimykh zvukakh (Inaudible Sounds) 2nd ed., enl., Moscow, Voyenizdat, 143 p. (Series: Nauchno-populyarnaya biblioteka) No. of copies printed not given. 1918
- Ed.: Ya. M. Mader; Consultant of Publishing House: L. G. Merkulov, Docent; Tech. Ed.: A. M. Gavrilova.
- PURPOSE: This book is intended for the general reader interested in the study of sound, particularly ultrasonics.
- COVERAGE: This booklet discusses sounds beyond the perception of the human ear, i.e., ultrahigh frequency waves. It treats the characteristics and applications of ultrasonics as well as the methods of generating them. The author explains the principles of sound phenomena, discusses the first uses of ultrahigh frequency waves, the effect of ultrasonic waves on living organisms, the interfelationship between sound and chemistry, the use of ultrasonic waves for precision measurement and control, other practical applications of ultrasonics, and the principles and design of an ultrasonic microscope. A supplement

Card 1/6

Inaudible Sounds Sov/2178

provides detailed instructions on how to build a simple ultrahigh frequency generator. The following scientists are mentioned as having made contributions in the field of ultrasonic research: V.L. Levshin, S.N. Rzhevkin, S.V. Gorbachev, A. B. Severnyy, S.Ya. Sokolov, Inventor of a reflection defectoscope, and F.K. Gorskiy and V. I. Yefremov who in 1953 discovered that ultrahigh frequency waves will accelerate ageing not only in liquids but in solids. There are 18 Soviet references.

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KUDRYAVTSEV, D.D.

PHASE I BOOK EXPLOITATION

SOV/1211

Nozdrev, Vasiliy Fedorovich

Primeneniye ul'traakustiki v molekulyarnoy fizike (Application of Ultrasonics in Molecular Physics) Moscow, Fizmatgiz, 1958. 456 p. 5,000 copies printed.

Eds.: Suslov, B.N., and Ye.B. Keznetsova; Tech. Ed.: Murashova, N.Ya.

PURPOSE: This book is intended for post-graduate research students and students of advanced courses in the field of molecular physics and acoustics. It may also serve as an aid to engineers and technicians in different branches of industry.

COVERAGE: This book deals with the physical principles of the optical and impulse methods of measuring the velocity and coefficient of absorption of ultrasonic waves in liquids and gases. Special attention is given to apparatus and methods of measuring the velocity and coefficient of absorption of ultrasonic waves in liquids and their vapors at high temperatures and pressures, including the critical region. Tables of acoustic properties, constants, and parameters of many substances are included. Research data from Soviet institutions, foreign institutions and individual scientists which have a dir-

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Application of Ultrasonics (Cost.)

SOV/1211

ect bearing on the subject matter of this book are given, including the results of the Second Intermational Congress on acoustics held in the USA in June 1956. The author states that this book is not a complete survey, but that it presents the results of many years of work by personnel of the Laboratoriya molekulyarmoy akustiki MOPI (Laboratory for Molecular Acoustics of the Mescow Oblast Pedagogical Institute imeni N.K. Krupskaya) and part of the work by the Faculty of Molecular Physics of Moscow State University, headed by A.S. Predvoditelev, Corresponding Member, Academy of Sciences, USSR. The author states that there are three works in the Russian language which give complete data on developments in ultrasonics up to 1950. They are: "Rasprostranealye ulitrazvukovykh voln v zhidkostyakh" (Propagation of Ultrasonic Waves in Liquids), by I. Mikhaylov; "Primereniye ulitraakusticheskikh metodov v praktike fiziko-khimicheskikh issledovaniy" (The Use of Ultrasonic Methods in Practical Physicochemical Investigations), by B. Kudryawtsev; and "Ul'trazvuk" (Ultrasonics), by L. Bergmann) the latter a translation from German. The author thanks his teacher, Professor A.S. Predevitelev, for discussions on the most difficult problems of molecular acoustics; Professor S. Ya. Sokolov, Corresponding Member of the Academy of Sciences, USSR, Professor S.N. Rzhevkin, N.K. Semenchenko

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Application of Ultrasonics (Cont.) SOV/1211

and B.B. Kudryavtsev for carefully reviewing the manuscript; and Candidates of Sciences N.I. Koshkin, L.F. Lependin, V.F. Yskovlev, N.A. Imitriyeva, post-

Sciences N.I. Koshkir, L.F. Lependin, V.F. Yakovlev, N.A. Dmitriyeva, post-graduate student V.M. Kovaleva, and L.G. Belinskaya for assistance in preparing the manuscript for publication. There are 280 references, of which 178 are Soviet, 1 Dutch, 64 English, 14 French, 21 German and 1 Scandinavian.

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NOZDREV. V.F., prof., red.; KUDRYAVTSHV, B.B., prof., red.; ZHITOV, S.P., tekhn. red.

[Application of ultrasonics to research on materials; papers of the convention. No.4. No.6.] Primenenie ul'traskustiki k issledovaniu veshchestva; trudy konferentsii. Pod redaktsiei V.F. Nozdreva i B.B. Kudriavtseva. Moskva, Izd. MOPI. No.4. 1957.
219 p. No.6. 1958. 239 p. (MIRA 11:10)

1. Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov. 4th. (Ultrasonics) (Chemistry, Physical and theoretical)

MOZDREV, V.F., prof., red.; KUDRYAVTSEV, B.B., prof., red.; ZHITOV, S.P., tekhn.red.

[Application of ultrasonics to research on materials; papers of the conference] Primenenie ul'traskustiki k issledovaniu veshchestva; trudy konferentsii. Pod red. V.F. Nozdreva i B.B.Kudriavtseva. Moskva, Izd.MOPI. No.7. 1958. 283 p. (MIRA 12:2)

1. Vserossiyakaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov, 4th.
(Ultrasonics)

s/124/60/000/006/008/039 A005/A001

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 6, p. 39, # 7093

Kudryavtsev, B.B. AUTHOR:

The Application of Measurements of Sound Absorption to Investigations

TITLE: of Liquids

Tr. Seminara po fiz. i primeneniyu ul'trasvuka, posvyashch, pamyati prof. S. Ya. Sokolova. Leningrad, 1958, pp. 146-164 PERIODICAL:

The author gives a review of the works dealing with the utilization of measurements of sound absorption for studying the physico-chemical features of liquids. The sound absorption coefficient & is composed of coefficients caused by the shear viscosity, the secondary viscosity, and the heat conductance. In absence of dispersion, the absorption is proportional to the square of the frequency. The deviation from this law is ascribed usually to relaxation phenomena (for example, chemical reactions). The theory relates the maximum value of the absorption coefficient, calculated for the wavelength $\mu_{\rm max} = \alpha\lambda$, to the value of ω max τ , where ω max is the frequency, for which the maximum is stated, and T is the relaxation time of the process causing the secondary viscosity. This

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s/124/60/000/006/008/039

The Application of Measurements of Sound Absorption to Investigations of Liquids

latter value is also determined by measuring the correlation lpha (ω). The author notices that difficulties are encountered in this way, which are often circum. vented by insufficiently founded assumptions; as an example, it had been assumed that the part of absorption residual after elimination of the absorption caused by the shear viscosity and the heat conductance, has necessarily relaxation nature; often also the state is complicated by the fact that several relaxation processes may occur in a liquid. Assumptions have to be made on the mechanism of the reaction, which corresponds to the relaxation process, when determining quantitatively the thermodynamic characteristics. The author dwells upon the analysis of the works, in which the equilibrium was studied between the rotary isomers in liquids: acrylaldehyde, triethylamine, and others, and also between other isomeric forms. In some works the relaxation was studied in connection with the inhibition of the excitation of molecular oscillations (methylene chloride, benzene, carbon disulfide, and others). Moreover, relaxation processes in solutions are considered and data on these processes, which were obtained by measuring the ultrasound absorption. There are 47 references.

Translator's note: This is the full translation of the original Russian abstract.

AUTHORS:

Balyan, S. A., F

Kudryavtsev, B. B.

50**V/156-**58-2-6/46

TITLE:

Sound Propagation in a Liquid Mixture Whose Components Form a Chemical Compound (Rasprostraneniye zvuka v zhidkoy smesi, komponenty kotoroy obrazuyut khimicheskoye soyedineniye)

PERIODICAL:

Nanchnyge doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 224-228 (USSR)

ABSTRACT:

The sonic velocity in liquids is correlated by a certain dependence with some physical and chemical properties (Ref 1). Therefore it can be expected that the velocity of sound will showally change in liquids whose composition as interest the title will change too. On the curve describing the sound velocity versus composition function points are to be expected corresponding to the composition of the compound to be formed. Data in publications differ (Refs 2-6). So, the authors selected mixtures of acetic anhydride, water and ethanol because these components form a compound which either does not at all dispociate or if this occurs it forms products differing from the initial components. The velocity of sound was determined optically (Ref 7) according to the observed diffraction of light by an ultrasonic grating. Reference 1

Card 1/-

Sound Propagation in a Liquid Lixture Whose Components Form a Chemical Compound

above the variation of the sonic velocity C, the density and viacosity η in a mixture of acetic anhydride and water depending on the composition. In this case all curves show a normal course marked by 2 important points: a) The anomaly of the 1. point corresponds to a maximum in the left half and does not entail chemical compounds. This climax is explained by the peculiar structure of the water. According to the writers' opinion, the maximum in curves illustrating the variation of density and viscosity goes back to the same causes. The 2. point which corresponds to a mixture of an equimolar composition is apparently caused by the formation of a compound of both components. These facts were corroborated by measurements of the 2. system: Acet-anhydride-ethanol (Table 2). Based upon acoustic measurements the authors computed a correction caused by the interaction-energy of the components of mixtures. It is proportional to the molar percentage of the formed compound. The molecular ennic velocity is modified linearly by the composition of the mixture. The formation of a chemical compound composed of the mixture components does not exercise an influence on the additive proper-

Card 2/3

Cound propagation in a liquid Sixture hose Components for a Chemical Compound

ties of the molecular sonic velocity. There are 5 figure and 2 references, 7 of which are loviet.

Countries: Refedre obshehey fixiki Moskovskogo oblastnogo pedegomicheskogo (Chair of General physics of the redegogic Institute of the Moscow Oblast)

MEMITITE: Fovember 11, 1981

AUTHORS:

Kudryavtsev, B. B., Balyan, S. A.

507/156-58-4-2/49

TITLE:

Connection Between the Solution Viscosity and the Sound

Velocity in the Solution (Svyaz' mezhon vyazkost'yu zhidkosti i

skorost'yu zvuka v ney)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya

tekhnologiya, 1958, Nr 4, pp 617-620 (USSR)

ABSTRACT:

A quantitative connection is found between the solution viscosi-

ty and the sound velocity in the solution. The results are

expressed in equation (6):

 $\lg \eta = A + 1/2 \lg M + 3/2 \lg T - 2/3 \lg V - 2 \lg c + B \cdot T^{-1} \cdot c^{2}$ (6)

In equation (6) (A) and (B) are constants. The connection between the viscosity and the sound velocity was investigated in 19 different liquids; it is given in figures (1) and (2). Equation (8) is suggested for the calculation of the viscosity

coefficient:

 $\eta = AQ^{4/3}T^{1/2} \left(e^{\frac{C^2}{\eta, my, \eta, \tau}} - 1\right). \tag{8}$

Card 1/2

It was experimentally found that between sound velocity

sov/156-58-4-2/49

Connection Between the Solution Viscosity and the Sound Velocity in the Solution

and temperature there exists a linear dependence:

 $c = c_0 (1 + \alpha_0 \cdot t)$.

By equation (14) the authors show that between sound velocity and viscosity in the liquid the following connection exists:

 $\frac{\text{const}}{\gamma} + A = B(c_0 - c)$ (14) in which $A = \omega - V_0$ and $B = \frac{V_0}{3c_0}$.

There are 2 figures and 8 references, 3 of which are Soviet.

Kafedra obshchey fiziki Moskovskogo oblastnogo pedagogicheskogo ASSOCIATION:

instituta (Chair of General Physics at the Moscow Chlast .

Institute of Pedagogy)

June 11, 1958 SUBMITTED:

Card 2/2

KUDRYAVTSEU, B. B.

AUTHOR:

Kudryavtsev, B.B.

46-4-2-20/20

TITLE:

Sixth Scientific Conference on Application of Ultra-Acoustics to the Study of Matter (Shestaya nauchnaya konferentsiya po primeneniyu ul'traakustiki k issledovaniyu veshchestva)

PERIODICAL:

Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, p 207 (USSR)

ABSTRACT:

Complete translation. Sixth Conference on Application of UltraAcoustics to the Study of Matter was held on **February 3-7,1958 and was**organized by the Ministry of Education of the Russian F.S.S.R.
and Moscow Regional Pedagogical Institute imeni N.K. Krupskaya.
About 80 papers were read at this conference. Professor F. Kuchera
About 80 papers were read at this conference. Professor F. Kuchera
described work on molecular acoustics in Poland. A considerable
portion of papers dealt with theoretical problems of molecular
portion of papers dealt with theoretical state using acoustical
accustics such as: study of the critical state using acoustical
methods (V.F. Nozdrev); microstructure of sound (M.I. Shakhparonov,
methods (V.F. Nozdrev); effect of internal electro-magnetic
sound (B.B. Kudryavtsev); effect of internal electro-magnetic
fields on propagation of ultrasound in electrolytes (A.S. Predvoditelev);
relationship between the structure of glass and its adiabatic

Card 1/5

46-4-2-20/20 Sixth Scientific Conference on Application of Ultra-Acoustics to the Study of Matter

compressibility (V.V. Tarasov); distribution of ultrasound in ferromagnetics (N.S. Akulov); relaxational theory of non-linear effects (Ye. V. Stupechenko, I.P. Stakhanov); absorption of ultrasonic waves of finite amplitude (L.K. Zarembo); effect of fluctuations on diffractional image (L.A. Chernov); theory of an ultrasonic interferometer (S.N. Rzhevkin); distribution of ultrasound at low pressures (N.I. Perepechko); calculation of absorption in gases (A.A. Senkevich); propagation of ultrasound in a Van der Waals gas (A.A. Kasparyants); theory of distribution and absorption of sound in acetates (B.A. Belinskiy) etc. A large number of papers reported experimental observations of peculiarities of ultrasound propagation: in reacting mixtures (S.A. Balyan); in electrolytic solutions (R.F. Kanatova); in suspensions (R.T. Temnikova); binary mixtures (T.V. Klevtsova); ternary mixtures (A.S. Shilyayev); deuterated compounds (I.B. Rabinovich); near the region of freezing of liquids (N.F. Otpushchennikov); in nitrogen at pressures up to 1000 kg/cm2 (M.P. Valarovich, D.B. Balashov); in liquids at pressures up to 2000 atm Card 2/5 L.F. Vereshchagin, N.A. Yuzefovich); in saturated water vapour

46-4-2-20/20

Sixth Scientific Conference on Application of Ultra-Acoustics to the Study of Matter

(V.I. Avdonin); in barium titanate ceramic (I.V. Bushev); in coal (A.K. Matveyev, E.G. Martynov); in ethyl alcohol vapours (K.T. Akhmetzyanov, M.G. Shirkevich) etc. Lively discussions were held on the problem of absorption of sound: in acetates (I.G. Mikhaylov, N.I. Koshkin, V.S. Lutovinin, V.F. Nozdrov, O.A. Starostina); in the critical region (B.I. Kal'yanov); in quartz monocrystals (L.G. Merkulov, E.S. Sokolova); in the region of the transition liquid -- crystal (M.G. Gorbunov, N.I. Koshkin) etc. Some of the papers dealt with the problems and phenomena related to propagation of ultrasound: interferometer theory (V.I. Ilgunas, E.P. Yaronis); behaviour of cavitational bubbles (A.V. Kustova); pulse method of absorption measurement (B.I. Kal'yanov); use of multiple reflection in the study of liquids (A.D. Zipir, V.F. Yakovlev); interferrometric measurements at high temperatures (Yu. S. Trelin); comparison of direct and acoustic measurement capacity (Kh. I. Amirkhanov, A.I. Kerimov, A.I. Alibekov); application of ultrasound to the study of electric discharges on cavitation (V.I. Skorobogatov); dispersing action of cavitation

Card 3/5

46-4-2-20/20

Sixth Scientific Conference on Application of Ultra-Acoustics to the Study of Matter

(B.B. Kudryavtsev); making ultrasomic fields visible (V.I. Makarov); certain problems of testing for defects (I.N. Yermolov); effect on ferromagnetic properties of substances (A.V. Kerenskiy, V.S. Cherkashin, A.I. Drokin); transmission of centimetric electromagnetic waves through an ultrasonic grating (in Gershenzon) etc. Great interest was shown in the papers on practical applications of ultrasound: removal of corrosion from metals (L.B. Pirozhnikov); acceleration of dyeing of artificial fibres (G.V. Goryachko, N.A. Dmitriyeva, N.I. Larionov); determination of pressure in saturated plastic petroleum products (G.V. Cherchenko, V.M. Nikolayev, E.G. Bezrukov, V.I. Belousov); crystallization temperature of paraffin (A.V. Savinikhina); the effect in electrochemical processes (F.I. Kukoz); intensification of absorption (V.I. Dal', N.N. Mal'tsev); effect of food products (A.I. Zolotova); improvement of seam in electric welding (L.F. Lependin); coagulation of merosols (M.p. Mednikov); deposition of suspensions (A. Ye. Bazhanova); errect on distribution of metal in electro-deposition (A.I. Trofimov) etc.

Card 4/5

46-4-2-20/20

Sixth Scientific Conference on Application of Ultra-Acoustics to the Study of Matter

A special session was devoted to demonstration experiments in acoustics (A.S. Mel'nikov) and teaching of musical acoustics in schools (K. Ye. Baranov). Lively discussions during the conference made it possible to elucidate disputable problems and to indicate methods for their solution. The number of papers on applications was larger than at previous conferences.

Card 5/5 1. Seund-Applications-Conference

KUDRYAVTSEY, B.B.; RZHEVKIN, S.N.

Fifth seminar on accustics in Olsztyn. Akust.zhur. 4 mo.4:
376 O-D '58. (MRA 11:12)

(Sound)

"APPROVED FOR RELEASE: 07/12/2001

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sov/58-59-5-11505

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 227 (USSR)

AUTHOR:

Kudryavtsev, B.B.

TITLE:

The Velocity of Sound Propagation in Suspensions

PERIODICAL:

V sb.: Primeneniye ul'traakust. k issled. veshchestva. Nr 7, Moscow,

1958, pp 17 - 25

ABSTRACT:

Using an interferometer, the author measured the velocity of sound in the following concentrated suspensions: SiO2, CaCO3, CaSO4 · 0.5H2O, Caso4 · 2H20, and NaCl, which had been obtained on the base of liquid mixtures, the specific weight of which was equal to that of the pulverized solid body. The author calculated this velocity on the assumption that interaction between the liquid medium and the solid phase is absent, and that when the composition of the investigated mixtures is expressed in volumetric fractions, the adiabatic compressibilities are additive. The results of this calculation agree satisfactorily with experiment in the case of all the above-mentioned

Card 1/2

suspensions except NaCl. The theoretically calculated velocities of

The Velocity of Sound Propagation in Suspensions

SOV/58-59-5-11505

sound in suspensions of NaCl diverge considerably from those found experimentally. This divergence can be explained either by intensive surface interaction between the solid particles and the liquid, or else by the emergence of the structure which is observed in this suspension.

B.B. Kudryavtsev

Card 2/2

65963

sov/58-59-4-9081

24.1900 Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 4, pp 243 - 244 (USSR)

AUTHOR:

Kudryavtsev, B.B.

TITLE:

Propagation of Sound in Liquids 7

PERIODICAL:

V sb.: Primeneniye ul'traakust. k issled. veshchestva, Nr 7, Moscow,

1958, pp 257 - 268

ABSTRACT:

On the basis of analyzing the molecular structure of a liquid, the author demonstrates the existence in it of molecular associated complexes capable of bringing about vibrations whose frequencies are close to those of ultrasonic vibrations. The existence of molecular complexes may cause a dispersion of the velocity of ultrasonic waves that is similar to the anomalous dispersion in the optics. The excitation of the vibrations of the molecular resonators causes an extra absorption of sound, which, for frequencies far from those of the natural vibrations of the resonators, is proportional to the square of the frequency of the sound, as well as the absorption due to displacive viscosity. The energy absorbed by the resonators may not manifest itself in a rise in temperature for some time. In the region of frequencies close to those of the natural

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Propagation of Sound in Liquids

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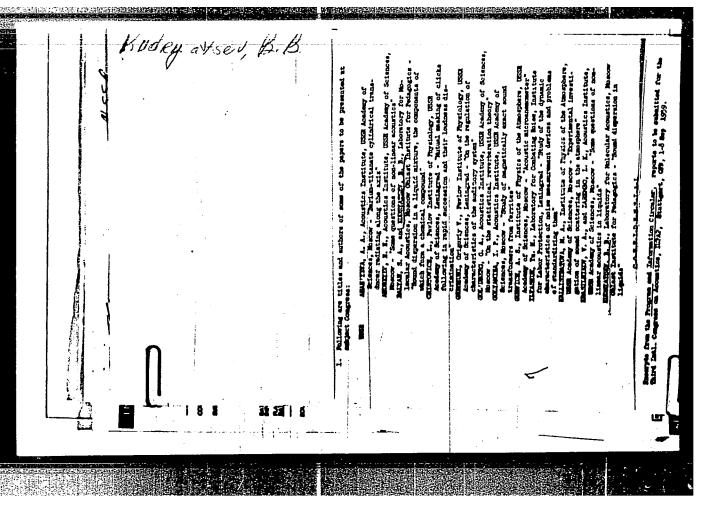
vibrations of the molecular vibrators, one will probably observe an anomalous absorption which is qualitatively reminiscent of absorption due to relaxation phenomena but which permits the resolution of individual absorption regions that are contiguous to one another. The bibliography contains 14 titles.

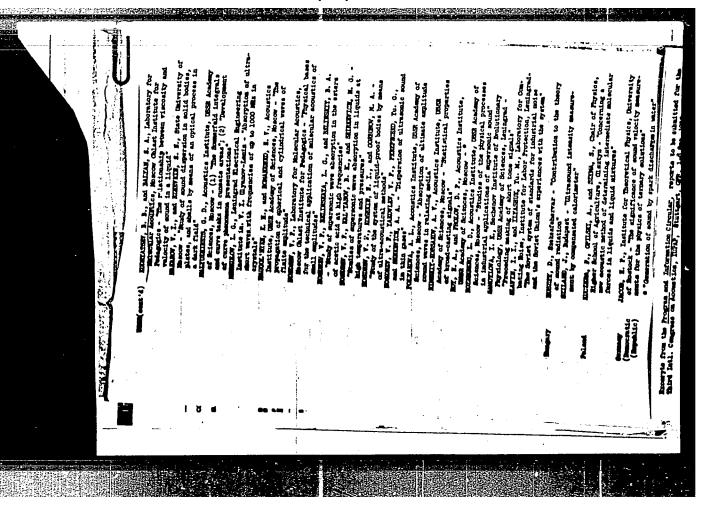
B.B. Kudryavtsev

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1	 Vaeroseiyekaya konferentaiya, professorov i prepodevateley peda cheskikh institutov. 	gogi-	
	Primenthiye ul'treakustiki k iseledovaniyu veshohestva; trudy konferentsii, vyp. 8 (Application of Ultresonics in the St of Matter; Transactions of a Conference, Nr. 8) Mosdow, Ix MOPI, 1959. 170 p. 1,000 copies printed.	udy d.	
* 	Teuh, Ed.: S. P. Zhitov.	İ	
	PURPOSE: The book is intended for physicists, particularly the specializing in the field of ultrasonics.	180	
	COVERAGE: This is a collection of 12 articles dealing with proof accoustics, ultrasonics, and solecular physics. Reference are given at the end of each article. Predvoditelet, A.S. Dispersion of Accoustic Waves in Rarefied		
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PHASE I BOOK EXPLOITATION

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Moscow. Dom nauchno-tekhnicheskoy propagandy

- Primeneniye ul'trazvuka v promyshlennosti; sbornik statey (Industrial Use of Ultrasound; Collection of Articles) Moscow, Mashgiz, 1959. 301 p. 8,000 copies printed.
- Sponsoring Agency: Obshchestvo po rasprostraneniyu politisheskikh i nauchnykh znaniy RSFSR.
- Ed. (Title page): V.F. Nozdrev, Doctor of Physical and Mathematical Sciences, Professor; Ed. (Inside book): G.F. Kochetova, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Machinery and Instrument Manufacturing (Mashgiz): N.V. Pokrovskiy, Engineer.
- PURPOSE: This book is intended for engineers and technicians engaged in the application of ultrasonics in machinery manufacture and in other branches of industry.
- COVERAGE: This is a collection of papers read at the first all-Union conference on the use of ultrasonics in industry. Attention

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Industrial Use (Cont.)

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is focused mainly on the description of ultrasonic equipment and on the use of ultrasound for the machining of hard materials and for flaw detection. The effect of ultrasound on metal-crystallation processes is also discussed. No personalities are mentioned. References accompany many of the papers.

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Ultrasound in Welding

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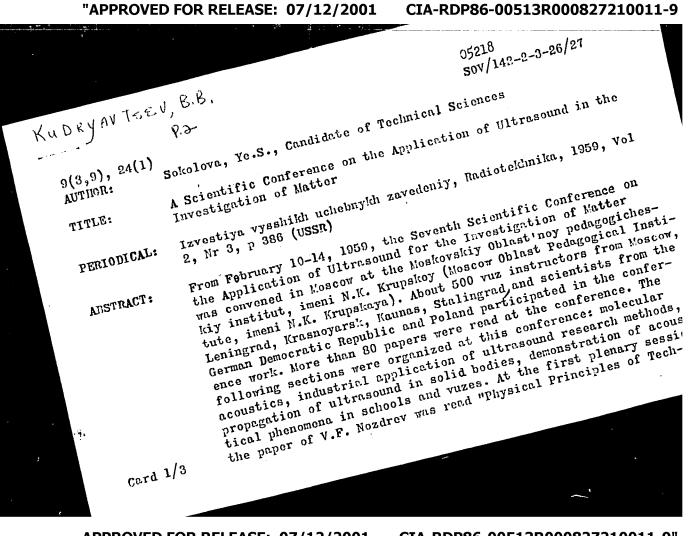
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VK/jb 6-15-60

NOZDRKY, V.F., prof., red.; KUDRYAVTSKY, B.B., prof., red.; ZHITOV, S.P., tekhn.red.

[Application of ultra-acoustics to studies of the matter]
Primenenie ul'traakustiki k issledovaniiu veshchestva.
Pod red. V.F.Nozdreva i B.B.Kudriavtseva. Moskva, Izd.
MOPI. No.8. 1959. 170 p. (MIRA 12:8)

1. Moskovskiy oblastnoy pedagogicheskiy institut im. Krupskoy (for Nozdrev). (Ultrasonic waves)



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05218 S0V/142-2-3-26/27

A Scientific Conference on the Application of Ultrasound in the Investigation of Matter

nological Application of Low-Amplitude Molecular Acoustics". B.B. Kudryavtsev read his paper "The Application of Ultrasound in Industry". The following papers were read at the plenary session: A.S. Predvoditelev "The Sound Wave Dispersion in Rarefied Gases"; Dr. Rothard, German Democratic Republic, "Ultrasonic Investigation of Silica Gel and ItsDerivatives"; M. Kvek, Poland, "The Application of the Molecular Kinematic Theory of Gases to the Problem of Waves with a Limited Amplitude"; N.S. Akulov, "The Theory of Roschell-type Salts", and a paper of Professor F. Kucher, Poland. Research in the field of ultrasound wave propagation in liquids was the subject of the papers of B.B. Kudryavtsev, S.A. Balyan, L.G. Belinskaya, O.A. Starostina, V.M. Zekurenova, V.D. Kaspar'yants, M.G. Shirkevich, L.F. Vereshch gina, N.L. Bryukhatova, and N.A. Golosowa. The paper jointly produced by B.B. Kudryavtsev, V.F. Nozdrev, N.I. Koshkin and V.F. Yakovlev was devoted to the consideration of problems in the development of molecular acoustics. Dr. Rothard delivered a report on the dynamic equation of the state of strongly viscous liquids. The ultrasonic oscillations were subject of the reports of Yu.M. Bystrov, A.N. Trofimov, A.I.

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S/058/60/000/008/009/009 A005/A001

Translation from: Referativnyy zhurnal, Fizika, 1960, No. 8, p. 348, # 21263

AUTHORS: Kudryavtsev, B.B., Medvedev, A.N., Ponomarev, A.P.

TITLE: The Influence of the Ultrasonic on the Luminescene of Phosphors

PERIODICAL: V sb.: Primeneniye ul'traakust. k issled. veshchestva., No. 9, Moscow, 1959, pp. 139-145

TEXT: The authors investigated experimentally (the unit design is presented) the influence of the ultrasonics on the kinetics of luminescene of the light amount stored by phosphors: ZnS·CdS·Cu and ZnS·Cu. It turned out that the intensity of the luminescence process of the light amount stored by a luminophor increases with increasing ultrasonic intensity. The enhancing effect of the ultrasonic is caused in the main by the heating of the luminosphor in consequence of the acoustic energy absorption. When considering the heating under the ultrasonic effect, it is necessary to take into consideration the local

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\$/058/60/000/008/009/009 A005/A001

The Influence of the Ultrasonic on the Luminescene of Phosphors

temperature increases, which can exceed the average temperature increase of the entire layer of the luminophor.

ASSOCIATION: Mosk. ped. in-t im. Krupskoy (Moscow Pedagogical Institute imeni Krupskaya)

B.B. Kudryavtsev

Translator's note: This is the full translation of the original Russian abstract.

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5(4)

507/69-21-1-8/21

AUTHOR:

Kudryavtsev, B.B.

TITLE:

The Dispersing Action of Cavitation (Dispergiruyush-

cheye deystviye kavitatsii).

PERIODICAL:

Kolloidnyy zhurnal, 1959, Vol, XXI, Nr 1, pp 58-61

(USSR)

ABSTRACT:

A study has been made of the dispersion of transformer oil in water under the action of cavitation occuring in the passage of a jet of superheated steam near the water-oil interface. Microphotographs and the corresponding particle-size distribution curves of the emulsion are presented. A simple apparatus is described for the multistep dispersion of liquids, with the aid of which finely-dispersed homogenous emulsions may be obtained. Solids with small cohesive forces between the particles have been shown to be capable of dispersion by a steam-initiated cavitation. There are 2 graphs, 2 diagrams, 1 photo and 8 references, 5 of which are

Soviet, l American, 1 Canadian, and 1 English.

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